

UNITED STATES DISTRICT COURT FOR THE  
EASTERN DISTRICT OF NEW YORK

**BARBARA SCHWAB, et al., Individually  
and on Behalf of All Others Similarly  
Situated,**

**Plaintiffs,**

**v.**

**PHILIP MORRIS USA, INC., et al.,**

**Defendants.**

**Civil Action No. 04-1945 (JBW)**

**DAVID W. STEWART  
EXPERT REBUTTAL REPORT**

I, David W. Stewart, make the following declaration under penalty of perjury:

**I. BACKGROUND, EXPERTISE, AND SCOPE OF ASSIGNMENT**

1. I am the Robert E. Brooker Professor of Marketing in the Gordon S. Marshall School of Business at the University of Southern California. I have previously provided a report in this matter that I incorporate herein by reference.

2. I have been asked by counsel for defendants in the present matter to provide a response to the supplemental expert reports offered by John Hauser, Joel Cohen, Paul Slovic, Marvin Goldberg, and Stanley Presser.

3. In preparing my report I have reviewed the supplemental expert reports of John Hauser, Joel Cohen, Paul Slovic, Marvin Goldberg, and Stanley Presser. I have also reviewed the deposition testimony of Drs. Hauser, Cohen, Slovic, Goldberg, and Presser, as well as the exhibits and other underlying materials that were provided by Dr. Hauser in connection with his report. I will address each of these reports in turn.

4. Based on my review of materials and my expertise in marketing, advertising and consumer psychology I have formed the following opinions all of which are stated to a reasonable degree of scientific certainty.

## **II. EXECUTIVE SUMMARY**

5. I have reviewed the reports of each of the five experts offered by plaintiffs: Drs. Hauser, Cohen, Slovic, Goldberg and Presser. I address below in detail the specific opinions offered in the reports of each of these five experts. Here I offer a summary of my response before turning to more specific and detailed discussion of each report.

6. Only one of Plaintiffs' five experts, Dr. Hauser, offers any affirmative empirical data to support his opinion. He offers the results of an Internet survey of smokers of "light" cigarette brands that purports to examine the factors that influence smokers' choice of cigarettes and the value of "healthier" cigarettes to smokers. Dr. Hauser's survey and the conclusions he draws from its results are fundamentally and fatally flawed. His survey creates highly artificial product alternatives that are provided to smokers of "light" cigarette brands for evaluation. These alternatives do not include the most important factor that influences the choice of cigarettes by smokers -- brand equity. Dr. Hauser also ignores other factors that influence choice including, menthol versus non-menthol, and filter tip versus non-filter tip. Additionally, none of his alternatives are described in terms of FTC levels of tar and nicotine and none include the health warnings that are mandated for all cigarette advertising and packages.

7. Dr. Hauser creates highly artificial alternatives that include selections that are not available in the market: a cigarette with greater health risk than "regular"

cigarettes and a cigarette that has less health risk than ultra-light cigarettes. His results report that many smokers have a preference for the non-existent “healthier” cigarette relative to the non-existent, very unhealthy cigarette. These results offer no insight into smokers’ choices of cigarettes that actually exist in the market. Dr. Hauser’s survey explicitly suggests to respondents that there are differences in health risks associated with different types of cigarette, ignoring the very substantial empirical research that demonstrates that many smokers do not believe there are any differences in health risks associated with cigarettes that differ in their FTC measured levels of tar and nicotine.

8. By creating artificial differences in health risk and by inflating the range of health risk and price among his alternatives relative to the two other attributes included in his product descriptors, taste and type of pack (hard versus soft), Dr. Hauser makes the outcome of his survey a foregone conclusion. The results of his survey were foreordained by its design. Such results provide no insights into the actual choices of real smokers in existing markets now or in the past.

9. While plaintiffs offer Dr. Hauser’s empirical work as support of their position, Dr. Cohen suggests that virtually all empirical research is uninformative because smokers cannot articulate the reasons for their behavior. Thus, he dismisses all of the very substantial qualitative and quantitative research that demonstrates the many and varied characteristics, attitudes, and preferences of smokers of “light” cigarette brands, and that demonstrates that many smokers, including smokers of “light” cigarette brands, believe that there are no differences in the health risks of “light” cigarette brands relative to full flavor cigarettes. His criticism of prior empirical research would also apply to the empirical work of Dr. Hauser.

10. Having dismissed all prior empirical evidence regarding the purchase decisions of smokers of “light” cigarette brands, Dr. Cohen then offers his own interpretation of the reasons smokers choose “light” cigarette brands. This interpretation is inconsistent with empirical evidence. Dr. Cohen appears to base his opinions on his interpretation of various “theories” of consumer behavior, “field of forces,” and cognitive dissonance. But his interpretation of these theories is problematic. The same theories Dr. Cohen uses as support for his opinions can be interpreted to support the opposite of his opinions. Thus, the “field of forces” theory is quite consistent with the view that smokers vary on many dimensions, change over time, and base their purchase decisions on many different factors. This alternative interpretation is also consistent with the empirical research Dr. Cohen dismisses. Similarly, cognitive dissonance theory can be interpreted in exactly the opposite of Dr. Cohen’s interpretation. Rather than smokers rationalizing their purchase of “light” cigarette brands by appeal to a belief that they are “healthier” as Dr. Cohen suggests, cognitive dissonance would also suggest that smokers might justify their preference for the taste of “light” cigarette brands through dissonance reduction. Cognitive dissonance theory also suggests that there are enormous differences among smokers—differences in the amount of dissonance experienced, if any; differences in how dissonance is resolved, if at all; and differences in the source(s) of dissonance in the first instance. There is nothing in any of these theories consistent with Dr. Cohen’s personal opinion that perceived health benefits universally influence smokers’ purchase of “light” cigarette brands.

11. Dr. Cohen argues that health benefits are uniformly positive factors in decision making among most consumers, including smokers of “light” cigarette brands.

The fallacy in this point-of-view is that what may be correct at an abstract level does not necessarily hold in specific purchase and consumption situations. There are many attributes that smokers may value in the abstract: health, low price, high quality, customization, convenience, and others. Just because consumers might prefer low price in the abstract does not mean they always buy the lowest priced product. Consumers may value quality, but fail to buy the highest quality product. Consumer decision making is very complex, sometimes involving trade-offs. Thus, a smoker may well understand the health risks of smoking, including smoking "light" cigarette brands but still prefer the taste of "light" cigarette brands to other types of products. In such a circumstance, the smoker has made a conscious decision to discount the known risks of smoking "light" cigarette brands. This does not mean the smoker has been "deceived" about health risks. Rather, it means the smoker places greater value on some other attribute or benefit of the product. Despite Dr. Cohen's appeal to theories that suggest complex decision-making and significant variability among consumers, he offers a narrow view of the reasons for smokers' choice of "light" cigarette brands. Such a view, which dismisses empirical research and ignores plausible alternative explanations of smokers' behavior, is not consistent with the use of science.

12. Dr. Slovic appears to argue that emotion plays a role in smokers' decision to purchase "light" cigarette brands and causes smokers to underestimate the risks of smoking "light" cigarette brands. It is certainly the case that emotion can, and often does, play a role in consumer behavior, including the decisions of smokers to purchase "light" cigarette brands. The benefits of smoking -- such as taste, oral pleasure, social camaraderie, and relaxation, among others -- may be associated with a positive emotional

response to cigarettes, including “light” cigarette brands. This does not mean that smokers fail to understand the health risks of smoking “light” cigarette brands. Rather, such benefits, and the associated emotional responses, may become elements in the decision to purchase “light” cigarette brands that are traded-off against known health risks.

13. Dr. Slovic offers no evidence that smokers of “light” cigarette brands underestimate the risks of smoking their cigarettes. He also ignores the very substantial empirical evidence that smokers of “light” cigarette brands well understand the risks of smoking these brands and chose to smoke these cigarettes despite this knowledge. There is no scientific basis for Dr. Slovic’s opinions and substantial evidence to the contrary.

14. Dr. Goldberg bases much of his opinion on his unique interpretation of the actions and intentions of the manufacturers of “light” cigarette brands. He ignores the affirmative role of smokers in their decision to purchase “light” cigarette brands. He also ignores the role of the public health community and government regulatory agencies, such as the Federal Trade Commission, in the development of the low tar category of cigarettes, including the “light” cigarette brands. He also ignores changes in the accepted scientific opinion regarding the health benefits associated with reduced levels of measured tar and nicotine. Like plaintiffs’ other experts, Dr. Goldberg ignores the substantial empirical evidence of differences among smokers of “light” cigarette brands. Dr. Goldberg offers no opinion about how cigarette manufacturers should have responded differently in the face of enormous pressure from the market, the public health community, and government regulators.

15. Dr. Goldberg offers only his opinions and his own interpretation of events. He ignores substantial empirical data contrary to his opinions and such opinions have no probative value.

16. Finally, Dr. Presser has offered a critique of a small number of surveys carefully selected for him by plaintiffs' attorneys. Dr. Presser admitted in his deposition testimony that he had not been provided all the survey evidence I relied on in my previous report. He also admitted he has done no independent survey research on which he might rely, nor reviewed the substantial and relevant research that is available in the published literature. Rather, Dr. Presser merely offers his views about the limitations of a few, hand-picked surveys.

17. There is no doubt that any individual survey has limitations and its design is an exercise in compromise. A decision to strengthen one dimension of a survey may weaken another dimension. Thus, a survey research design that includes only "light" brand smokers will necessarily eliminate responses from other smokers who might switch to "light" cigarette brands in the future or who have made an informed and considered decision not to purchase "light" cigarette brands. Such a design decision does not necessarily make the survey invalid, nor is the decision necessarily a "flaw". Rather, it is decision by the researcher that provides some benefits as well as some limitations. Dr. Presser's opinion focuses on a review of the limitations of a few studies; it is not a review of the relative strengths and weaknesses of these studies.

18. My own analyses, as described in my earlier report, were intended to describe and summarize empirical findings across a wide array of survey research projects conducted by many different parties, using many different designs, at many

different points in time. These surveys included research projects designed and sponsored by cigarette manufacturers, the public health establishment, and even individuals who have been prominent expert witnesses for the plaintiffs' bar in actions against cigarette manufacturers. I found a remarkable degree of consistency among these many and varied surveys. There is an unambiguous pattern of results across surveys, sponsors and time. This pattern makes it very clear that smokers of "light" cigarette brands differ on many dimensions and possess a diverse set of preferences and beliefs related to their cigarette brand choices. Dr. Presser makes no effort to analyze these many studies. None of his opinions, with respect to the specific limitations of a few studies, contradicts my general findings and conclusions.

19. I now turn to a more specific and detailed response to the reports of each of the plaintiffs' experts.

### **III. RESPONSE TO DR. JOHN HAUSER**

20. Dr. Hauser offers a conjoint analysis of smokers of "light" cigarette brands that purports to measure the value and importance of health risks to "light" brands smokers in the decision to purchase a "light" cigarette brand.<sup>1</sup> Dr. Hauser uses a well-known methodology, conjoint analysis, to reach the conclusion that health risk is a positive contributing factor in the choice of "light" cigarette brands for 90.1% of consumers, and that among these consumers health risk is, on average, second only to price in importance.

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<sup>1</sup> Expert Report of John Hauser, Aug. 22, 2005, at 4 ("Hauser Report") (Ex. I).



21. Conjoint analysis is part of a class of analytic tools for the analysis of choice. The broader class of tools is collectively referred to as choice modeling. Conjoint analysis differs from the broader class of choice modeling tools in that it most often assumes that choices involve a single stage of decision making that involves trade-offs among different characteristics of products.<sup>2</sup> This method has its roots in cognitive psychology and psychometrics and is widely employed in marketing as a means for informing such decisions as product design, pricing, and marketing communications, among others. An underlying assumption of conjoint analysis is that any individual's choice represents a response to a specific combination of characteristics (a bundle of attributes). Conjoint analysis provides a means for determining within a provided bundle of product attributes those features that consumers prefer and the relative weight (part-worth) that each feature contributes to the choice. The term "conjoint" refers to the assumption that the relative value of any features considered jointly as part of a "bundle" can be measured by decomposing the overall choice (or some other measure of preference) into a combination of the individual elements that produce the overall choice.<sup>3</sup>

22. Like most research tools, the validity of any result produced by a conjoint analysis rests on the validity of underlying assumptions, the integrity and generalizability

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<sup>2</sup> It is possible to structure a conjoint analysis to accommodate multiple stages of decision-making, such as the choice of a retail outlet that is followed by the selection of a product offered at the outlet selected, and non-compensatory decision rules (choices that do not involve trade-offs).

<sup>3</sup> Gilbert A. Churchill, Jr. and Dawn Iacobucci (2005), *Marketing Research*, Ninth Edition, (Mason, OH: South-Western), p. 538.

of the data, and the underlying logic, that is, the permissible rules for operating on the data.<sup>4</sup> As Marder observes, assuming the integrity of the data, “conclusions that can be drawn from any particular body of data are fully determined as soon as the assumptions and the logic have been specified.”<sup>5</sup>

23. By assumptions Marder means, among other things, that the correct product characteristics are employed, the analysis is conducted on the correct sample (relevant market) and the stimuli (product descriptions) presented to respondents are reasonable representations of what they might encounter either at present or at some point in the future. Other assumptions that underlie any conjoint analysis are that information about product characteristics can be presented in a meaningful and relevant manner to respondents, and that this presentation offers a “fair” description of all of the relevant attributes, that is, that the manner of presentation of information about individual attributes does not create an artificial bias that causes respondents to give greater weight to one attribute relative to another based solely on the method of presentation. For example, product descriptions that include very large price differences among alternatives, but suggest minimal differences in quality, convenience and reliability of the alternatives are pre-determined to find that price is the most important factor in choice. This might not be a problem in applications of conjoint analysis where this presentation represents the state of the world, but it is a serious problem that can produce misleading conclusions when product characteristics are not fairly represented.

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<sup>4</sup> Eric Marder (1997), *The Laws of Choice, Predicting Customer Behavior*, (New York: Free Press), p. 24.

24. Marder's use of the term "logic" refers to the manner in which the conjoint analysis is designed. A conjoint analysis involves an effort to create a "model" of choice that describes and predicts the decision maker's selection. Just as there is a "logic" associated with writing a computer program, so too is there logic associated with the design of analytic tools such as conjoint analysis. When writing a computer program, the logic defines a model that includes various steps, actions, and intermediate outcomes that ultimately produce the output sought from the program. Thus, if the logic of a computer program is inadvertently written in such a way that the number "2" is always set equivalent to the number 5, the program would produce "10" as an answer to a question of what is  $2 + 2$ . Similarly, when conducting a conjoint analysis there is logic to the design that defines the various steps, actions, and intermediate outcomes that produce the final result of the analysis. For example, part of the logic of a conjoint analysis might include a decision to allow respondents to be indifferent with respect to alternatives versus forcing a choice that a respondent might not ordinarily make.

25. Even when the data that inform a conjoint analysis are otherwise reliable and valid, the relevance and validity of any conclusions that arise from a conjoint analysis rest on the validity of its underlying logic and assumptions. Thus, it becomes very important to identify, understand, and test the validity of the underlying assumptions and logic when evaluating the results of a conjoint analysis. The underlying assumptions and logic of any specific conjoint analysis influences and may foreordain the outcome.

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<sup>5</sup> *Id.*

So it is with Dr. Hauser's analysis; his results were predetermined by the "assumptions and logic" he employed in the design of his conjoint analysis. I will elaborate on the reasons this is the case in the paragraphs to follow.

26. The validity of the results of a conjoint analysis rests on the extent to which the results produced in an artificial survey environment ultimately match results obtained with real products in real markets. To use a simple example, if the results of a conjoint analysis suggest that a particular new product is worth \$99.00, and it is found that the product sells for \$99.00 when introduced in the market, we would conclude that the results of the conjoint analysis were valid. On the other hand, if no one would purchase the product even at a ten-dollar price, there must either be a problem with the conjoint analysis, or at the very least, with the correspondence between the product examined in the conjoint analysis and the product actually offered in market.

27. In order to increase the likelihood of obtaining a valid result from a conjoint analysis, it is critical to specify assumptions and logic consistent with obtaining a valid result. Thus, it is important to assure that the design of the conjoint analysis includes relevant factors that exist or will exist in the market. This includes specification of the appropriate market, identification of all the relevant factors that may influence consumers' choices, specification of the relevant beliefs and perceptions of relevant consumers, competitive factors, market conditions, and other factors that may influence consumers' actual choices in the market. One way to assess the potential validity of a conjoint analysis absent an actual market test is to assess the degree to which the design of a conjoint study, including its assumptions and logic, adequately and accurately represent the market to which the results are to be extrapolated. Dr. Hauser's conjoint

analysis fails this test -- his assumptions and logic are not representative of the market for "light" cigarette brands or of the choices made by smokers of "light" brands. Therefore his results indicate nothing about the value of health benefits to smokers of "light" cigarette brands. I will describe the failings of Dr. Hauser's design and the reasons his results are invalid below.

28. Dr. Hauser's study does not incorporate the relevant product attributes that influence smoker choice. Dr. Hauser's survey creates an artificial world in which he narrows the number of product attributes on which smokers can base their choices to four: price, health risk, taste, and package (hard or soft pack). Curiously the single most important factor influencing smoker choice -- brand equity -- was not included in Dr. Hauser's study.<sup>6</sup> Other factors, including length, color of filter, circumference, menthol or non-menthol, and FTC level of tar and nicotine were also excluded. Exclusion of these other characteristics, especially ones as influential as brand equity and mentholation, not only affects the validity of the study, it also has the effect of inflating the value of the four attributes examined.<sup>7</sup>

29. Dr. Hauser's study uses attributes that differ in range, specificity, and meaningfulness. It is well known that the values of attributes obtained in a conjoint

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<sup>6</sup> K. Michael Cummings, Andrew Hyland, Terry F. Pechacek, Mario Orlandi and William R. Lynn (1997), "Comparison of Recent Trends in Adolescent and Adult Cigarette Smoking Behavior and Brand Preferences," *Tobacco Control*, 6 (Suppl. 2), S31-S37. These authors conclude: "Evidence from two recent studies indicates smokers to be extremely brand loyal, with fewer than 10% switching brands annually." (Ex. 2).

<sup>7</sup> Robert J. Dolan (1990), *A Manager's Guide to Conjoint Analysis*, (Cambridge, MA: Harvard Business School Publishing) (Ex. 3).

analysis are influenced by the number and variability of the options available for each attribute, an effect referred to as a range effect.<sup>8</sup> Evidence of this range effect is present in Dr. Hauser's results. The least important attribute, package, had only two options (hard pack or soft pack). The attribute that on average was third in importance was taste, which had three levels ("tastes like a regular cigarette," "tastes like your brand of 'light' cigarette," and "tastes like an 'ultra-light' cigarette"). Both of the two attributes found most important -- price and health risk -- had five levels. This is an example of the way in which assumptions and logic preordain the results of a conjoint analysis. Those attributes with the greatest range, or variability, were most important, and those with the least range were least important. In other words, those characteristics with greater numbers of options, price and health risk, are found more important than those characteristics with fewer options. However, this finding only means that respondents had greater opportunity to express differences in preference within these options and may say nothing about the relative importance of these features had they been presented with the same number of options or levels.

30. Dr. Hauser's design finds taste less important than price and health risk. This is contrary to a significant body of survey evidence that indicates taste plays a major role in smokers' choice of cigarette brands and packings.<sup>9</sup> Such an anomalous result should have alerted Dr. Hauser to problems with the design of his conjoint study. Range

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<sup>8</sup> Donald Lehmann, Sunil Gupta, and Joel Steckel (1998), *Marketing Research*, (Reading: AWL); Dick Wittink, L. Krishnamurthi, and David Reibstein (1989), "The Effect of Differences in the Number of Attribute Levels On Conjoint Results," *Marketing Letters*, 1, 113-123 (Ex. 4).

<sup>9</sup> I reviewed a considerable amount of this survey evidence in my previous report.

effects are not even the most serious problem. The descriptors of taste are ambiguous at best. Taste is a sensory characteristic; it has many dimensions. Dr. Hauser's respondents were given no opportunity to sample taste. Instead they were asked to select from artificial verbal descriptors of taste that included "tastes like a regular cigarette," "tastes like your brand of 'light' cigarette," and "tastes like an 'ultra-light' cigarette." The problem is that "tastes like a regular cigarette" and "tastes like an ultra-light cigarette" are meaningless descriptors. Smokers routinely differentiate among the tastes of cigarettes brands within the same product category. Thus, not all full flavor cigarette brands taste the same to all smokers and not all ultra-light brands taste the same to all smokers. In the same way, smokers differentiate among tastes of different "light" cigarette brands, so even the "tastes like your brand of 'light' cigarette" does not provide an anchor for comparison without the smokers having the ability to sample the taste of the full flavor and ultra-light alternatives in order to make a comparison to their own "light" cigarette brand. The ambiguity of the taste descriptors assured that survey respondents would discount the taste attribute.

31. In addition, the price ranges used by Dr. Hauser increase the importance of price. This is partly a range (number of levels) effect, but it also reflects the very significant variation in price Dr. Hauser introduced into his artificial market. His price levels ranged from "50% more than what you pay now" to "50% less than what you pay now." Having the price range from plus or minus 10% or even plus or minus 20% price would almost certainly have been found to be less important. This is a problem for two reasons. First, these assumptions about price differences inflated the importance of price. More importantly, Dr. Hauser uses these price differentials as a way to derive the value

of other product attributes, such as health risk. The values he obtains are not independent of the assumptions and logic underlying his study, including the price points most relevant.

32. By anchoring the trade-offs between price and the other attributes on 50% more or less than the current price paid Dr. Hauser creates a specific price point that drives the value of the other attributes. Had he used other values for price in his product descriptors he would likely have arrived at a very different conclusion regarding the value of "health risk." For example, if he had used 10% and 20% as I suggest above, the value of "health risk" could not have been greater than 20% of the current price. On the other hand, had he used 100% more than current price rather than 50% of current price as the extreme price points he might well have found a willingness among some of his respondents to pay as much as 100% more for cigarettes to reduce health risk. This is a part of the "logic" of the design. The selection of the price points used to describe the alternatives is completely arbitrary, but they determine the outcome obtained. Just as setting "2" to "5" in a computer program produces "10" when adding  $2 + 2$ , so too does arbitrary specification of price points produce an outcome that may be at variance with the real world and the ways in which consumers actually make choices.

33. Dr. Hauser's study creates an artificial market that includes products that do not currently exist in the market. Dr. Hauser offers respondents to his survey a product with "health risks greater than regular cigarettes" and a product with "health risks less than 'ultra-light' cigarettes," along with products that are described as having health risks that are the same as regular cigarettes, the same as "light" cigarette brands, and the same as "ultra-light" cigarette brands. These statements about health risks are themselves



ambiguous since they do not define specific risks (respondents were told to use their personal beliefs about health risk).<sup>10</sup> However, what this design actually does is create a very “good” alternative (health risks less than “ultra-lights”) and a very “bad” alternative (health risks greater than regular cigarettes). This sets up a situation in which respondents will strongly prefer the “good” alternative to the “bad” alternative. Based on my analysis to date, it appears that the results Dr. Hauser obtained that are related to the value of health risk represent the value of the very “good” alternative over the very “bad” alternative. It does not appear that in Dr. Hauser’s conjoint study the participants gave much value to the different intermediate alternatives. Thus, the only conclusions that can be drawn with respect to the value of health risk appear to be related to products not currently on the market.

34. This is another example where the underlying assumptions and logic of the study preordain the results obtained. The design of the conjoint analysis assumes that such products exist and that smokers believe that differences in health risk exist. The logic of the design provides a “number” that purportedly represents the “value” of reduced health risk, though much of this value may exist only between the non-existent “good” alternative and the non-existent “bad” alternative.

35. It is, of course, possible to extrapolate values to intermediate values of an attribute based on results obtained at the extremes. Consider an example in which consumers will pay \$50 more for a “good” product over a “bad” product, but are

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<sup>10</sup> Hauser Report at 15.

relatively indifferent with respect to differences among a set of intermediate choices. One could construct a value table that produced this \$50 difference by assuming that the next best alternative to the “bad” product is worth \$12.50 more, the middle alternative is worth \$25 more than the “bad” product, the next best alternative is worth \$37.50 relative to the bad product, and the “good” product is \$50 more valuable than the “bad” product. Such an analysis would be inappropriate and inconsistent with reality if consumers are relatively indifferent among the middle alternative, but the mathematical logic still works. Such an analysis would also suggest that consumers would pay \$37.50 more to obtain the next best alternative to the “good product.” This is precisely what Dr. Hauser does on page 29 of his report when he concludes that 75% of smokers would be willing to pay 50% more for a pack of cigarettes to decrease health risks from those greater than regular cigarettes to a pack of cigarettes with the risks associated with “light” cigarette brands. If one accepts the underlying assumptions and logic, the mathematics works but this does not mean the result is valid. The results merely follow from the assumptions and logic, and, if they are wrong and inconsistent with reality they have no validity and no relevance.

36. Dr. Hauser’s survey creates an artificial world in which respondents are told to assume that there are differences in health risks among cigarettes. In focusing on health risk, Dr. Hauser addresses an attribute about which tobacco companies have not made explicit claims. A more realistic (realistic in terms of market) test would have focused on the value of lowered tar and nicotine. This is information that the cigarette manufacturers have made available in response to directives by the FTC. By focusing on health risk, Dr. Hauser has raised its salience and has suggested to respondents that there

are health risk differences among cigarettes. Considerable prior research indicates that many smokers do not believe there are any differences in health risk between full flavor and “light” cigarette brands. Dr. Hauser’s survey asks respondents to suspend their beliefs and accept that there are differences in health risks. The set of attribute options he constructs for health risk clearly and unambiguously suggest to respondents that there must be differences in health risk between full flavor, “light” and “ultra-light” cigarette brands. This led even those smokers who believed there are no real differences to assume that there must be when responding to Dr. Hauser’s survey. This is clearly at odds with conditions that exist in the market where some cigarette manufacturers are actively communicating the risks of “light” cigarette brands and many smokers already hold the belief that “light” cigarette brands are no safer than full flavor cigarettes. This is again an example of results flowing from the assumptions and the logic of the research design, but having no validity for predicting consumer behavior or market outcomes in the real world.

37. Dr. Hauser’s own pre-test interviews should have put him on notice with respect to the problems with his research design. For example, in his Pre-test Notes, one respondent, Bert, is recorded as saying that he doubts there is any tar and nicotine difference in ultra-light cigarettes.<sup>11</sup> Similarly, Chris states that “light” brands have the same health risk as full flavor cigarettes: “it’s still a cigarette.”<sup>12</sup> Tom states that he does not believe “light” brands are any healthier. In this case the note taker even observed that

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<sup>11</sup> Hauser Pre-Test Interview Notes at 41-42 (Ex. 5).

Tom could suspend his beliefs about the health benefits of cigarettes (or rather his belief that there was no health benefit).<sup>13</sup> Karl observes that tar and nicotine levels are the same for “light” as for “regular” cigarette brands.<sup>14</sup> John makes clear that there are not uniform taste differences among “light” cigarette brands, observing that he prefers the taste of Marlboro Lights to full flavor (regular) cigarettes and to other “light” cigarette brands.<sup>15</sup>

38. In the interview notes used by Dr. Hauser for his subsequent Time Study dated October 27, 2005, a similar pattern of consumer response that should have placed him on notice that the research design he employed for the conjoint analysis was flawed. In these notes, respondent Dawn is recorded as stating that she thought the health risks of “light” brands was the same as for “regular” cigarette brands.<sup>16</sup> John stated that he always knew that the health risks of “light” and “regular” cigarette brands were equivalent.<sup>17</sup> Mary and Sandi both indicated that their beliefs about health risks changed recently but they now thought the risks of “light” brands equivalent.<sup>18</sup> Thus, the interviews used by Dr. Hauser in the conjoint analysis and the later Time Study make very clear that many smokers do not believe there is any difference in health risk between “light” cigarette brands and full flavor cigarettes. Nevertheless, Dr. Hauser uses a

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<sup>12</sup> Hauser Pre-Test Interview Notes at 44-45 (Ex. 6).

<sup>13</sup> Hauser Pre-Test Interview Notes at 46-48 (Ex. 7).

<sup>14</sup> Hauser Pre-Test Interview Notes at 233-234 (Ex. 8).

<sup>15</sup> Hauser Pre-Test Interview Notes at 43-44 (Ex. 9).

<sup>16</sup> Hauser Time Interview Notes, p. Hauser641 (Ex. 10).

<sup>17</sup> Hauser Time Interview Notes, p. Hauser662 (Ex. 11).

<sup>18</sup> Hauser Time Interview Notes, p. Hauser664 (Ex. 12).

research design for the conjoint analysis that forces respondents to assume that there are health differences.

39. Dr. Hauser's survey was conducted several years after Monograph 13 was issued. This monograph changed the public health community recommendations with regard to low yield cigarettes. Monograph 13 concluded that "there is no convincing evidence that changes in cigarette design between 1950 and the mid 1980s have resulted in an important decrease in the disease burden caused by cigarette use either for smokers as a group or for the whole population."<sup>19</sup> Thus, the design of Dr. Hauser's study was inconsistent with the current state of science. It is inconsistent in two ways. First, Dr. Hauser's survey sets up a situation in which survey participants are told to assume facts at odds with the conclusions of Monograph 13. In the survey respondents are explicitly instructed:

Through your own experience, including what you may have heard from television, newspapers, the government, friends, or other sources, you have formed beliefs about the health risks of certain types of cigarettes. For example, you might believe that smoking light cigarettes provides more health risks or provides less health risks than smoking regular cigarettes. We want you to use YOUR personal belief about the health risks of different types of cigarettes in the questions to follow.

Please assume the health risks of cigarettes depend on many design features including the choice of tobacco, additives, and the characteristics of the cigarettes. **You will be asked to choose among cigarette designs that vary on health risks.**

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<sup>19</sup> NCI Monograph 13, at 146 (Ex. 13).

**We will present five different levels of health risks  
associated with smoking cigarettes.**

Exhibit D to the Expert Report of John Hauser, August 22, 2005, at 11. (Ex. 14).

40. These instructions clearly ignore the conclusions of Monograph 13. Although these instructions state that survey participants should use their own beliefs about health, the examples offered are explicit in stating that there are differences in health risks. In the more general instructions the respondent is presented with examples that suggest a difference in health risk -- there is no example of a belief in equal risk nor is there any instruction to the respondent as to how they should respond if they do not believe there is a difference in health risk among different forms of cigarettes. In the very specific instructions immediately prior to the choice task, respondents are told, “[w]e will present **five different levels** of health risk associated with smoking cigarettes.” (Emphasis added). Thus, respondents are told that the five descriptions of risk are different.

41. Having been explicitly told that they will be presented with “five different levels of risk” participants in the survey are then presented with options that clearly suggest a rank ordering of health risk among cigarettes. Respondents are asked to select from among cigarettes that are greater in health risk than regular cigarettes, the same health risk as regular cigarettes, the same health risk as “light” cigarette brands, the same health risk as “ultra-light” cigarette brands, and less health risk than “ultra-light” cigarette brands. This presentation alone suggests to respondents that there are differences in health risk among the five alternatives. Accompanied by an instruction that they will see five different levels of health risk, the set of five alternatives could not be interpreted by

respondents in any way other than a set of alternatives ranked by health risk. Thus, the presentation of health risk alternative is contrary to both Monograph 13 and the beliefs of the majority of smokers, as repeatedly demonstrated in survey research.

42. There is no provision in Dr. Hauser's survey for respondents to express or act on their belief that there is no difference in health risks among types of cigarettes. Respondents cannot be "indifferent" nor are they given an opportunity to express the reasons for their indifference. Rather, respondents are forced to make a choice. Confronted with choices where they have been told there are differences in health risk, it is not surprising that respondents would select the alternative with lower health risk. Such forced responses in an artificial choice situation where the "better" alternative has been defined by the survey instructions and design reveals nothing about smoker behavior in the market.

43. Dr. Hauser's Data. Thus far in my analysis of Dr. Hauser's survey, I have focused almost exclusively on how his assumptions and logic lead to preordained results that have no validity as predictors of actual smoker behavior or market outcomes. However, there are also problems with the data that have been collected and fit into the underlying model of Dr. Hauser's survey.

44. Dr. Hauser presents his choices to study participants in a highly artificial form. Respondents see verbal descriptions of product characteristics with no packaging, no brand name or other information that smokers would see when making a real purchase in the market. Perhaps even more problematic, given the focus of the survey on health risks, the product descriptions were provided to respondents without the health warnings that always appear on cigarette packaging and in cigarette brand advertising. This is a

serious omission that presents a distorted picture of market choices to survey respondents. Since the same health warnings appear on all types of cigarettes, these warnings would have the effect of reinforcing the health risks of smoking and the lack of difference of risk among alternative forms of cigarettes. Dr. Hauser's study presents participants with an artificial market environment in which standard information about health risks is missing and, as noted above, where participants are forced to assume that differences in health risks do exist. This raises the question of what market, if any, the results of Dr. Hauser's survey can be extrapolated to.

45. Dr. Hauser also uses a highly ambiguous term, "regular" cigarette, in the presentation of his alternatives. Past advertising for cigarettes has used the term regular in many different ways. Regular has referred to non-filtered cigarettes; regular has also referred to the length of cigarettes, and to cigarettes that are not mentholated. In the marketplace, "light" cigarette brands are usually contrasted to full-flavor cigarettes, which deliver higher levels of tar and nicotine than "light" cigarette brands based on the FTC test method. Thus, it is impossible to determine what type of cigarette Dr. Hauser's respondents had in mind when responding to the term "regular". Some respondents might have interpreted the term to mean full flavor, but others may have interpreted the term to mean unfiltered and still others may have thought the term referred to length. It is impossible to determine which survey respondents used a particular interpretation of the term "regular" so it is impossible to separate out for analysis only those respondents for whom regular means full flavor. To the extent that respondents brought different interpretations of the meaning of the term "regular" to the choice task it is not meaningful to aggregate their responses or make comparisons among them. In addition, such



differences in interpretation make any extrapolation of the real world meaningless because the same descriptors used by Dr. Hauser will have multiple and different analogs in the real world.

46. Dr. Hauser uses an Internet survey. Internet surveys have many advantages and can be a very useful means for reaching professionals who are routinely on the internet. On the other hand, there remain serious questions about the degree to which results of Internet surveys can be generalized to larger populations of consumers of frequently purchased consumer products, such as cigarettes. Most Internet surveys employ convenience samples that cannot technically be used to extrapolate to any larger population. In practice, convenience samples are widely used and the results are routinely generalized to larger populations. This is a practice that has justification in the relative success of the approach, and courts have accepted the practice.<sup>20</sup> However, the practice of extrapolation from well-designed convenience samples -- such as those that are obtained in properly constructed mall intercept studies and central location studies -- is successful, in part, because for such studies there is still an understanding of the characteristics of the underlying population from which a sample is selected. For example, characteristics of the population from a sample of respondents in a mall intercept can be reasonably inferred based on knowledge of the mall's trade area and the demographic characteristics of shoppers who frequent the mall. In addition, the face-to-face interaction with respondents in such samples, and the validation procedures that

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<sup>20</sup> Shari Diamond (2000), "Reference Guide on Survey Research," *Reference Manual on Scientific Evidence*, Second Edition, (Chicago: Federal Judicial Center), pp. 229-276.

follow, both provide a means for checking basic demographic characteristics such as gender, general age range, address, and other characteristics. No such controls and sources of validation exist in an Internet survey. Respondents can come from anywhere and provide demographic information that may or may not be correct. Payment of incentives, while a standard practice in mall intercept research, only increases the likelihood that respondents to an Internet survey will be unqualified unless there are other controls that assure knowledge of the identity of the respondent.

47. In Dr. Hauser's survey, a \$5 incentive was provided. In order to obtain the 627 respondents in his survey, Dr. Hauser had an Internet research firm extend more than 52,000 invitations for participation. More than 44,000 of these invitations were not responded to. Internet users are not representative of the general population, even today, so the characteristics of those receiving the invitations are unknown.<sup>21</sup>

48. Exhibit F of Dr. Hauser's report is especially illuminating. Only 16% of those receiving the invitation responded. Almost half of the remaining respondents either refused to participate once they learned of the focus of the survey or were terminated because they did not fit the quotas set for the study. The latter is an indication that the respondents who possessed certain demographic characteristics -- such as census region, age, sex, and household income -- were disproportionately represented in the original pool of potential respondents. Of the 3999 respondents left after self-termination or as

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<sup>21</sup> For example, the Pew Internet and American Life Project, May-June 2004 Tracking Survey found internet users to be generally younger and white, to have attained a higher education, and to have a higher household income than the general population. While there are methods emerging for developing more

the result of quotas, 2509 terminated because they were not smokers. This means that 37% of the individuals in the respondent pool at this point in the survey were smokers, a far higher proportion than found in the adult population of the United States. According to the Centers for Disease Control, less than 25% of the adult population was a smoker in 1995 (a figure that has likely declined over time).<sup>22</sup> It is, at the very least, odd that the Internet respondent pool employed by Dr. Hauser would include such a disproportionate number of smokers, especially in light of the fact that other demographic characteristics of users of the Internet, such as education and income are also associated with a lower incidence of smoking. The most plausible explanation for these facts is that some percentages of the respondents in Dr. Hauser's survey were not actually smokers. This can easily happen in an Internet survey where there is no control over repeated participation in surveys, respondents can disguise their identity and there is an incentive for participation in surveys.

49. If there are a significant number of nonsmokers in Dr. Hauser's survey, this creates at least two problems. First, the responses of nonsmokers are irrelevant and the sample is over-inclusive. Second, there are important problems raised when nonsmokers are asked to respond to questions that include anchors such as "your current brand." It is also important to consider how representative the response of a nonsmoker

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representative samples from the internet there is no evidence that any of these were employed in Dr. Hauser's survey.

<sup>22</sup> Center for Disease Control, *Smoking Among U. S. Adults*, February 1997, [http://www.cureresearch.com/artic/facts\\_about\\_smoking\\_among\\_u\\_s\\_adults\\_cdc\\_oc.htm](http://www.cureresearch.com/artic/facts_about_smoking_among_u_s_adults_cdc_oc.htm) (Ex. 15).

would be to a presentation of cigarettes without the standard warning message and where there is a suggestion that there are differences in health risk among products.

50. In summary, Dr. Hauser's survey reveals nothing about the value of health risk associated with real cigarettes in actual markets. The survey offers no insight into how smokers would make choices among real types and brands of cigarettes. The results obtained in the survey were foreordained by the assumptions and logic of its design.

#### **IV. RESPONSE TO DR. JOEL COHEN**

51. Dr. Cohen uses his rebuttal report to merely restate his earlier opinions. As with his original report, he offers no empirical data to support any of his opinions and ignores the substantial empirical data that is contrary to his opinions. I will address each of his opinions in turn.

52. Dr. Cohen opines that "all rationale people prefer good health to bad health, other things being equal."<sup>23</sup> I agree with Dr. Cohen; our differences rest in my attention to the important qualification "other things being equal." That qualification appears to be lost in Dr. Cohen's various opinions. My earlier report devoted considerable attention to the very substantial empirical literature that demonstrates that other things are not equal among smokers of "light" cigarette brands. In my report, I cited substantial qualitative research and survey research that demonstrates differences among smokers of "light" cigarette brands with respect to reasons for initiating smoking, reasons for smoking "light" cigarette brands, reasons for continuing to smoke, the

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<sup>23</sup> Expert Rebuttal Report of Joel Cohen, Sep. 28, 2005, at 1 ("Cohen Rebuttal") (Ex. 16).

benefits sought from smoking, beliefs about smoking in general and about “light” cigarette brands more specifically, smoking history, and numerous other factors. I also pointed to the differences among smokers of “light” cigarette brands over time, differences in the media environment, differences in the state of “scientific” knowledge about the health risks of low tar and nicotine cigarettes, and differences in the marketing practices and competitive environment of cigarette manufacturers. Stated simply and directly, all things are not equal among smokers of “light” cigarette brands. Dr. Cohen’s opinions cannot be correct because he ignores the fact that all things are not equal.

53. Dr. Cohen opines that “people came to believe that cigarettes that were purportedly lower in tar were likely to be somewhat safer (and certainly would not be harmful.)”<sup>24</sup> I agree that some individual smokers came to believe this at a point in time. As I observed in my earlier report and as described in the Expert Report of Peter English, the source of these beliefs was the public health community and government.<sup>25</sup> As I note below in my response to Marvin Goldberg, the cigarette manufacturers were encouraged by government regulators to respond to these beliefs. The industry responded by developing and promoting lower tar cigarettes based on a test designed, required, and conducted by the Federal Trade Commission.

54. Consistent with the requirements of the FTC, the industry reported the results of the FTC’s test in its advertising. In response to the urging of the government and public health authorities, and in response to smoker demand, cigarette manufacturers

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<sup>24</sup> *Id.*

developed and marketed low tar brands and packings. Notwithstanding the explicit claims about the health benefits of low tar cigarettes being made by the government and public health authorities, the industry made no such claims. Instead, the industry developed new brands and low tar extensions of existing brands and marketed those cigarettes using claims that focused on taste and flavor.

55. Many manufacturers utilized the word “lights” as a descriptor of this new category of cigarettes where the “lights” brand was an extension of an existing full-flavored “parent” brand. As I observe in my earlier report, the term “light” has been used in cigarette advertising since the 1920s and predates scientific concerns about the health effects of smoking.<sup>26</sup> These earlier uses of the term generally referred to the taste, flavor, or feel of tobacco and included both filtered and unfiltered cigarettes. Therefore, the term “light” had meanings in the context of cigarettes other than health at the time the name was selected. At the time the name was selected, there was no inherent “health” meaning in the term “light.” The term “light” acquired its association with lower tar cigarettes only because it came to describe this type of product and differentiate it from full flavor products. Any term used as a product descriptor -- “milds,” “14’s,” “golds,” “lesser’s,” to suggest a few alternatives -- would have acquired some association with lower tar, because the purpose of the name was to identify a type of cigarette (a type that was lower in tar as measured by the FTC). Dr. Cohen appears to be critical of the tobacco industry following the directives of the FTC.

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<sup>25</sup> See Expert Report of Peter C. English, Jun. 28, 2005 (“English Report”), at n. 11 (Ex. 17).

56. Dr. Cohen also opines that “all choice represents a trade-off among desirable and undesirable product features, with each of the former attracting and each of the latter repelling behavior.”<sup>27</sup> This is an oversimplification since the most frequent decision rule employed by consumers, the lexicographic rule, does not involve trade-offs.<sup>28</sup> This is a simple process whereby a consumer identifies what he or she believes to be the most important characteristic of a product and then chooses the product that is best on this dimension. For example, a smoker who considers the taste of a cigarette as most important would simply select the cigarette he or she thought tastes best. Other characteristics would not be considered. If more than one product is perceived to be equal on the most important attribute, the consumer compares the remaining alternatives on the second most important dimension. The smoker who finds the taste of two brands of cigarettes equally good may select the one that costs less. The lexicographic rule does not involve trade-offs, but is easy for the consumer and always results in a final selection, because the consumer can continue to add attributes on which to compare alternatives until only one option remains. Most decision rules used by consumers do not involve trade-offs. This includes the affect referral rule described by Dr. Slovic, which I discuss below.

57. Even when consumers use decision rules for choices that do involve trade-offs, they may not use the same attributes in making these trade-offs. Consumers seldom

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<sup>26</sup> Affidavit of David W. Stewart, Jun. 29, 2005, at 37 (Ex. 18).

<sup>27</sup> Expert Report of Joel Cohen, Feb. 28, 2005, at 1 (Ex. 19).

<sup>28</sup> Del I. Hawkins, Roger J. Best, and Kenneth A. Coney (2004), *Consumer Behavior*, Ninth Edition (New York: Irwin), at 575-576.

make trade-offs among all product features, characteristics, or benefits. In the case of cigarettes, some smokers may make trade-offs among price, brand, and taste, while other smokers may trade-off among levels of tar, length of cigarette, and type of package. Even when consumers use the same attributes for making trade-offs, they may apply different weights to the attributes they do use for decision-making.

58. Finally, contrary to Dr. Cohen's assertions, the influence of a given attribute in a given choice situation is not universally positive or negative. Rather, the extent to which a product attribute has a positive or negative influence, or any influence at all, is highly dependent on context. This will be true even when an attribute is positive or negative when considered alone. For example, most consumers when asked about price will say that it is important and indicate they value a lower price. However, price will not be a factor in decision-making if all product alternatives are comparable on price. A smoker may value health benefits in general, and even prefer a healthier cigarette. But if that smoker believes all cigarettes are equally dangerous, as many smokers do, health will not be a factor in this smoker's selection of a cigarette. In addition, the meaning and directional value (positive or negative) of an attribute is often influenced by context. A consumer may state that they value low price, but may respond very differently when asked whether he or she would select the lowest priced heart surgeon for by-pass surgery. Similarly, a smoker may value a reduction in risk of smoking, but view lower tar as an indication of a cigarette that is too weak in flavor among brands that are equally hazardous.

59. Finally, Dr. Cohen concludes that "because of the positive utility/value of 'better health' and its association with reduced tar 'Light' cigarettes, a rational consumer



would give this 'health' attribute significant weight in his or her choice of a 'Light' cigarette."<sup>29</sup> This is a conclusion unsupported by facts or logic and contradicted overwhelmingly by class member depositions. Smokers may value "health" in the abstract but may not believe that "light" cigarette brands are healthier or less hazardous. Indeed, as I observed in my earlier report, because some smokers (including several of the named plaintiffs) continue to smoke "light" cigarette brands in the face of broad dissemination of information about and awareness of the hazards of such cigarettes, there must be some association or benefit other than health that drives these decisions. This fact alone undermines Dr. Cohen's conclusions regarding the universality of the importance of health benefits in the decision to purchase "light" cigarette brands.

#### **V. RESPONSE TO DR. PAUL SLOVIC**

60. Dr. Slovic asserts that "... a large body of research findings demonstrates that smoking behavior is not determined by reasoned calculations of risks, costs and benefits, but rather by images and feelings that carry strong motivational force."<sup>30</sup> He goes on to argue that the effects of imagery and feelings may not always be above conscious threshold; therefore the smoker may not be aware of the effects of these factors on their behavior. From these premises he fashions an argument to the effect that cigarette manufacturers have used advertising and other types of positive imagery to mislead smokers regarding the risks associated with smoking generally, and "light" cigarette brands more specifically. He specifically argues that the meaning of the term

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<sup>29</sup> Cohen Rebuttal at 1.

<sup>30</sup> Expert Report of Paul Slovic, August 15, 2005 at 3 ("Slovic Report") (Ex. 20).

“light” is inherently positive and will therefore have the effect of imparting positive imagery, associations, and feelings to smokers who will then underestimate the risks of smoking.

61. Dr. Slovic’s use of the “affect referral” to explain the behavior of smokers is not new. More than thirty years ago Wright proposed a similar decision making rule.<sup>31</sup> This rule was originally proposed to describe the relative holistic evaluation of alternatives that characterizes the decision making for many consumers. This decision rule is most likely to apply to the select of alternatives (brands) within a category rather than the decision to initiate use of a product. The means by which the decision rule operates is lexicographic, that is, consumers make their selection based on an overall evaluation of the product, most often based on feelings toward a specific brand with which the consumer has had positive experiences in the past. This positive, holistic evaluation is applied without reference to underlying attributes, such as price, taste, health risk or other features of the product. Use of this rule for decision-making does not mean that smokers are unaware of or discount other characteristics of the product. Rather, these other characteristics are no longer given consideration at the point of immediate purchase, though they may well have been part of an earlier decision to try the product or a specific brand.

62. It is important to distinguish between decisions involving the routine repurchase of a favored brand and the decision to begin using a particular product. The

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<sup>31</sup> Peter L. Wright (1975), “Consumer Choice Strategies: Simplifying vs. Optimizing,” *Journal of Marketing Research*, 11 (Feb.), 60-67 (Ex. 21).

literature on consumer behavior distinguishes among decisions about product use and brand decisions.<sup>32</sup> It also distinguishes between trial of a product and repeat purchase.<sup>33</sup> The factors that influence the decision to initiate the purchase of a product, such as “light” cigarette brands and the decision about the specific brand to purchase are quite different. As I observed in my earlier report, the reasons that people first purchase a product, like cigarettes, are not necessarily the reasons that smokers continue to purchase the product or the reasons they select a particular brand, or type, of cigarette. Smokers who began smoking for social reasons may continue to smoke because they enjoy the taste of cigarettes or find it a convenient way to pass time. Surveys of smokers indicate that there are many reasons people smoke.<sup>34</sup> Among the reasons smokers offer for continuing to smoke are: influence of friends and co-workers who smoke, they got too irritable, to help cope with major stress and frustration, addiction and gained weight.<sup>35</sup> These reasons are very different from those of a smoker selecting a specific brand because they feel “good” about the brand or identify it as “their brand.” Dr. Slovic makes no effort to distinguish between the highly involving, socially driven decision to smoke

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<sup>32</sup> Everett M. Rogers (1995), *Diffusion of Innovation*, Fourth Edition (New York: Free Press), pp. 161-203; Leon G. Schiffman and Leslie Lazar Kanuk (2004), *Consumer Behavior*, 8<sup>th</sup> Edition, (Upper Saddle River, NJ: Prentice-Hall), pp. 547-559.

<sup>33</sup> Leon G. Schiffman and Leslie Lazar Kanuk (2004), *Consumer Behavior*, 8<sup>th</sup> Edition, (Upper Saddle River, NJ: Prentice-Hall), pp. 569-570; Lewis G. Pringle, R. Dale Wilson and Edward I. Brody (1982), “NEWS: A Decision-Oriented Model for New Product Analysis and Forecasting,” *Marketing Science*, 1 (Winter), 1-29 (Ex. 22).

<sup>34</sup> Rosita M. Thomas and Max D. Larsen (1993), Smoking Prevalence, Beliefs, and Activities, The Gallup Organization, May, Presented to the 1993 Annual Convention of the American Association for Public Opinion Research (Ex. 23).

<sup>35</sup> Final Report, Canadian Opinion on the Removal of L & M Labels from Cigarette Packages: A Qualitative Study with Smokers, Prepared for Health Canada Tobacco Control Programme, February, 2003, p.21 (Ex. 24).

and the routinized decision to buy a specific brand of cigarette. He ignores the considerable empirical data, obtained through qualitative research, survey research and deposition testimony that many smokers understood the risks of smoking at the time of initiation and continue to smoke despite a current awareness of the risks.

63. There are numerous problems with the conclusions offered by Dr. Slovic: (1) there is no basis for the claim that smoking behavior is not determined by reasoned calculations; (2) there is no basis for the assertion that positive imagery and feelings cause smokers to underestimate risk; and (3) there is no basis for the conclusion that the meaning of the term "light" is uniformly positive. Much of Dr. Slovic's report is devoted to a very general discussion of theories of decision-making, with little or no specific link to smoking behavior. This general discussion merely makes the point that people use perceived benefits and feelings about products when making decisions about their purchase. He offers no evidence that smokers' use of feelings in decision-making overall establishes that smokers have been misled about the health risk of smoking. Nor does he offer any evidence regarding how smokers interpret and use the term "light."

64. Smokers make decisions based on many factors. As I noted in my earlier report, smokers exhibit enormous variability in their reasons for smoking, the factors that influence their decisions to take up smoking and continue to smoke, and the factors that influence their choices of product type and brand. My earlier report cited more than two dozen surveys that provide empirical evidence that the vast majority of smokers understand the health risks associated with smoking in general and the use of "light" cigarette brands more specifically. Further, since completing my earlier report, I have had the opportunity to read the deposition testimony of more than 100 representatives of

plaintiffs in various actions involving “light” cigarette brands. For example, I recently examined the deposition testimony of twenty absent class members from the ongoing Georgia state, “lights” class action, *Piscetta v. Philip Morris*.<sup>36</sup> These depositions serve to validate that a variety of factors influence a smokers’ decisions to smoke “lights.” For example, some “light” brand smokers, such as Kevin Hagan, choose to smoke “light” brands for social reasons. He testified that he started smoking “light” brands because he “had the urge for a cigarette, and people around me were smoking Marlboro Lights at the time.”<sup>37</sup> While for others, such as Tara McClure, the choice is a result of taste, “I smoked Marlboro Lights because I liked the taste of them,”<sup>38</sup> or for William Hall, harshness. William Hall testified that he switched to Marlboro Lights from Marlboro Reds because “[Reds] were too harsh for me” that they felt too “heavy” in his throat.<sup>39</sup> Dr. Slovic offers no evidence to counter the surveys or testimony.

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<sup>36</sup> The depositions were taken pursuant to court order permitting the depositions of absent class members. See Order Granting Defendant’s Motion for Leave to Obtain Discovery from Absent Class Members and Granting Non-Parties Piscetta, Polinski, and Trendle’s Motion to Quash and for Protective Order, *Piscetta v. Philip Morris*, Case No. 03 VS 048475J (Ga. State Ct., July 14, 2005) (Ex. 25).

<sup>37</sup> Deposition of Kevin Hagan, *Piscetta v. Philip Morris USA Inc.*, Case No. 03 VS 048475J (Ga. State Ct. Nov. 7, 2005) at 8:17-23 (“Hagan Dep.”) (Ex. 26).; see also, e.g., Deposition of C. Susie Swanson, *Piscetta v. Philip Morris USA Inc.*, Case No. 03 VS 048475J (Ga. State Ct. Dec. 7, 2005) at 21:4-14 (stating she chose “lights” because “[e]verybody else smoked Marlboro Lights”) (“Swanson Dep.”) (Ex. 27).; Deposition of Mark Pulliam, *Piscetta v. Philip Morris USA Inc.*, Case No. 03 VS 048475J (Ga. State Ct. Dec. 2, 2005) at 27:8-12 (affirming that it was his friends smoking “lights,” not the word “light” that led him to choose “lights”) (“Pulliam Dep.”) (Ex. 28).; Deposition of Robert Ross, *Piscetta v. Philip Morris USA Inc.*, Case No. 03 VS 048475J (Ga. State Ct. Nov. 15, 2005) at 56:22-57:9 (smoked “lights” because “[t]hat is what I saw. That is what was around me.”) (“Ross Dep.”) (Ex. 29).

<sup>38</sup> Deposition of Tara McClure, *Piscetta v. Philip Morris USA Inc.*, Case No. 03 VS 048475J (Ga. State Ct. Nov. 6, 2005) at 15:1-4 (“McClure Dep.”) (Ex. 30).

<sup>39</sup> Deposition of William Hall, *Piscetta v. Philip Morris USA Inc.*, Case No. 03 VS 048475J (Ga. State Ct. Nov. 3, 2005) at 15:1-4 (“Hall Dep.”) (Ex. 31).

65. An underlying premise of Dr. Slovic's opinions appears to be that no rational person would smoke. Beginning with this premise, he then fashions an argument that any one who smokes must, by definition, not understand the risks, or if they do, they have somehow been misled with respect to risks through some mysterious, subconscious, non-rational, affective process that results in an under-estimation of risk. Dr. Slovic offers no empirical evidence to support his premise or his conclusion that smokers underestimate the risk of smoking. Indeed, his contention that smokers underestimate the risk of smoking is contrary to empirical evidence that smokers actually overestimate the risks associated with smoking.<sup>40</sup>

66. The theory of "affective" reasoning posited by Dr. Slovic is not inconsistent with rational choice. There are certainly affective elements involved in many smokers' choices. Imagery also plays a role in many smoker choices. The fact that smokers use feelings, imagery, or other associations, does not make them irrational. Consumers often purchase and use products because they feel good about the product or the product makes them feel good. A rational consumer may make trade-offs between feeling good about buying and using a product and health risks associated with the product. Inevitably, such trade-offs will result in risk being given less weight in the decision than if health risk alone were the basis for choice. Consumers' assignment of

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<sup>40</sup> Petter Lundborg and Bjorn Lindgren (2004), "Do They Know What They Are Doing? Risk Perception and Smoking Behaviour Among Swedish Teenagers," *Journal of Risk and Uncertainty*, 28 (3), 261-286 (Ex. 32); W. Kip Viscusi (1990), "Do Smokers Underestimate Risks?," *Journal of Political Economy* 98: 1253-69 (Ex. 33); W. Kip Viscusi (1991), "Age Variations in Risk Perceptions and Smoking Decisions," *Review of Economics and Statistics*, 73: 577-88 (Ex. 34); W. Kip Viscusi (1992), *Smoking: Making the Risky Decision*, (Oxford); W. Kip Viscusi (2002), *Smoke Filled Rooms, A Postmortem on the Tobacco Deal* (Chicago: University of Chicago Press).

lower weight to risk in such circumstances does not indicate that they fail to understand risk or they underestimate risk. Rather, it simply means that they evaluate and weigh information regarding multiple dimensions, and, for smokers, this may mean giving greater weight to the benefits of smoking than to the health risk.

67. Dr. Slovic argues that the word “light” is uniformly positive and therefore creates positive feelings and imagery regarding “light” cigarette brands. He then argues that these feelings and positive images overwhelm reason and cause smokers to underestimate the risks of smoking. Dr. Slovic admitted during his deposition testimony that he has never conducted a study to determine whether the word “light” causes people to have positive feelings about “light” cigarette brands.<sup>41</sup> The only empirical study he can point to for support was a study about “good guys wearing white hats.”<sup>42</sup> This was not a study of the word “light” at all; it was a study about the meaning of a color in a very specific context. There is simply no empirical basis for Dr. Slovic’s assertion that the term “light” is always understood to be positive.

68. In fact, the term “light” is not universally positive. As I noted in my earlier report, the term “light” has many potential meanings. Light often means having less of something (*e.g.*, less taste, fewer features, less rigorous, simple or easy, flimsy). Light can have multiple meanings in the same usage. For example, a light ice cream may be simultaneously understood to mean having fewer calories and having an inferior taste compared to regular ice cream.

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<sup>41</sup> Deposition of Paul Slovic, Nov. 3, 2005, at 37:25 (“Slovic Dep.”) (Ex. 35).

69. If one accepts Dr. Slovic's premise that the term "light" is universally positive, then by implication, "ultra-light" should be even more positive. It should then follow that "ultra-light" cigarette brands should dominate "light" cigarette brands in the market. This is not what we observe in the market; "ultra-light" cigarette brands have a modest share of the market relative to "light" cigarettes.

70. Thus, Dr. Slovic's opinions fail on theoretical, empirical, and logical grounds. The theory of "affective" decision making that Dr. Slovic uses as the foundation of his opinion does not even remotely suggest that smokers are irrational or fail to understand the health risks of smoking. In fact, the theory is completely consistent with smokers making informed trade-offs between positive feelings and benefits and association with the health risks of smoking. The empirical evidence provides very strong support for the proposition that the vast majority of smokers understand the health risks associated with smoking in general and "light" cigarette brands more specifically. There is no empirical evidence that the term "light" is understood by smokers generally to be a uniformly positive term, and there are ample examples of common usage of the word that are not positive. In fact, when LaTasha Kelly, a putative class member deposed in *Piscetta*, was asked what she believed the word "light" meant when used in conjunction with a food product, she replied, "[t]hat it's not going to be as good."<sup>43</sup>

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<sup>42</sup> *Id.* at 38.

<sup>43</sup> Deposition of LaTasha Kelly, *Piscetta v. Philip Morris USA Inc.*, Case No. 03 VS 048475J (Ga. State Ct. Nov. 7, 2005) at 46:5-13 ("Kelly Dep.") (Ex. 36).



71. Finally, if the term “light” is not understood to be uniformly positive, if positive feelings are merely one more product attribute, and smokers possess an understanding of the health risk associated with smoking “light” cigarette brands, Dr. Slovic’s opinion fails on logical grounds. In such circumstances the smoker has an array of information to consider when making a choice and can make trade-offs among the several attributes of product alternatives. Affect might influence choice but would not dominate the choice to the exclusion of other factors, as Dr. Slovic appears to suggest.

72. In summary, there is simply no scientific basis for the opinions offered by Dr. Slovic. His view is a decidedly pessimistic and unflattering assessment of human decision makers. It raises all manner of questions about the ability of any decision maker to arrive at informed and reasoned decisions. Indeed, the fundamental logical flaw in Dr. Slovic’s arguments is a philosophical one. If one accepts the premise that all human beings are led to irrational choices based on the domination of positive feelings in decision-making then the very fabric of all social institutions built on the premise of informed choice and individual responsibility is torn. This is because under such a scenario, all decisions or opinions are flawed and unreliable.

## **VI. RESPONSE TO DR. MARVIN GOLDBERG**

73. Dr. Goldberg offers a variety of opinions regarding the actions and intentions of cigarette manufacturers and the behavior of smokers. He has little to say about the affirmative role of smokers in making a conscious decision to smoke or to select “light” cigarette brands. He is also largely silent on the very important role of the public health community, which he characterizes as a “murmur,” and the Federal Trade Commission in the development of the “light” cigarette brand category. He offers a

number of opinions that are either without empirical evidence or are directly contradicted by empirical data.

74. Dr. Goldberg asserts that “smokers did not naturally gravitate to the experience of smoking low tar cigarettes. This was not a ‘pull’ marketing phenomenon, where smokers drive sales, but rather a ‘push’ phenomenon that was developed and shaped by the industry . . .”<sup>44</sup> I noted just this point in my earlier report, with the very important difference that I observed the “push” was attributable to the Federal Trade Commission at the urging of the public health community. There have been few other examples where the government has been so committed to creating a product category. Professor English has provided a very detailed and useful description of the role of the FTC in the development of the “low tar and nicotine” category in his expert report.<sup>45</sup>

75. Dr. Goldberg asserts that a primary motivation for smokers to select “light” cigarette brands is a desire to take a step toward quitting.<sup>46</sup> I observed in my earlier report that empirical data demonstrate that only a fraction of all smokers view switching to “light” cigarette brands as a step toward quitting smoking. People decide to quit or continue smoking for many reasons. Even if some smokers do decide to smoke “light” cigarette brands instead of quitting, such smokers are but one segment of the

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<sup>44</sup> Expert Report of Marvin Goldberg, September 28, 2005, at 1 (“Goldberg Report”) (Ex. 37).

<sup>45</sup> See English Report, *supra*, n. 25.

<sup>46</sup> *Id.* at 3.

much larger market.<sup>47</sup> There is no evidence that all smokers select “light” cigarette brands as a way to avoid quitting.

76. Dr. Goldberg’s view that smokers switch to “light” cigarette brands as a substitute for quitting fails to address the question of why many smokers initiate smoking with “light” cigarette brands. Such smokers cannot be selecting “light” cigarette brands as an alternative to quitting, because these smokers are initiating smoking with “light” cigarette brands. Differences between “switchers” (smokers who switch from full flavor cigarettes to “light” brands) and “initiators” (smokers who begin their smoking experience with “light” cigarette brands) are but one example of the enormous variability among smokers of “light” cigarette brands. For example, compare the reasons behind choosing “light” brands between “initiator” Allison Todd Watson and “switchers” Mary Deininger and Bill Reed. Ms. Watson stated that she started smoking “light” brands due to a “peer pressure she didn’t understand.”<sup>48</sup> Ms. Deininger indicated that she settled early for “light” brands after trying various brands due to the “flavor and the feeling” (and to some extent her impression that “lights” were safer than regulars) then later returned to “light” brands due to brand image, habit, strength, and taste.<sup>49</sup> Finally, Mr. Reed switched to “light” brands because they were less strong and he associated the

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<sup>47</sup>If smoking low tar and nicotine cigarettes were a substitute for not smoking it would be reasonable to assume that ultra-low tar and nicotine cigarettes would have fared far better in the market than has been the case.

<sup>48</sup> Deposition of Alison Todd Watson, *Piscetta v. Philip Morris USA Inc.*, Case No. 03 VS 048475J (Ga. State Ct. Nov. 16, 2005) at 13:14-19 (“Watson Dep.”) (Ex. 38).

<sup>49</sup> Deposition of Mary Deininger, *Piscetta v. Philip Morris USA Inc.*, Case No. 03 VS 048475J (Ga. State Ct. Nov. 17, 2005), at 29:4-12, 55:18-56:6 (“Deninger Dep.”) (Ex. 39).

strength of the cigarette with safety: "I thought they'd be better for me."<sup>50</sup> And yet, implausibly, Dr. Goldberg denies that such differences exist.

77. In my earlier report, I also reviewed empirical data on the relationship between quitting smoking and switching to "light" cigarette brands. As I stated in that report:

There is no evidence that all smokers select light cigarettes as a way to avoid quitting. Indeed, a study by Kozlowski, et al. found that 30% of "light" cigarette smokers reported that they smoked "light" cigarettes as a step to quitting.<sup>51</sup> However, a paper by Thun and Burns concluded that there was no adequate basis for concluding that smoking "light" cigarettes delayed quitting of smoking.<sup>52</sup>

78. Dr. Goldberg uses the well-worn theory of cognitive dissonance as the basis for his opinion that one consequence of the availability of "light" cigarette brands has been to provide an alternative to quitting smoking. The theory of cognitive dissonance posits that human beings have a need for consistency between behavior and attitudes. In the context of smoking, the theory would suggest that many smokers know smoking is unhealthy. This knowledge of the unhealthy effects of smoking, even as the smoker continues to purchase cigarettes, creates a tension or discomfort (a state of dissonance) that some smokers are motivated to resolve.

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<sup>50</sup> Deposition of Bill Reed, *Piscetta v. Philip Morris USA Inc.*, Case No. 03 VS 048475J (Ga. State Ct. Dec. 1, 2005), at 11:15-12:10 ("Reed Dep.") (Ex. 40).

<sup>51</sup> Adult Use of Tobacco Survey (1986) (Ex. 41).

<sup>52</sup> Lynn T. Kozlowski, Marvin Goldberg and Berwood Yost (2000), "Overview of Our Research on Light and Ultra Light Cigarettes," HHS075 0599/0656 (Ex. 42); Michael J. Thun and David Burns (2001), "Health Impact of "Reduced Yield" Cigarettes: A Critical Assessment of Epidemiological Evidence," *Tobacco Control*, 10 (Supp. 1), p. i9 (Ex. 43).

79. According to dissonance theory, this discomfort may be resolved in many different ways. A smoker could bring behavior in line with his or her knowledge of the risk of smoking by quitting smoking. Alternatively, a smoker might disregard or even denigrate information about the health risks of smoking. A smoker might also look to a peer group to reinforce the value of smoking or even reinforce the value of risk-taking. It is important to recognize that the theory holds that people differ widely in what causes dissonance, how much dissonance they experience, how much dissonance is required to motivate some response, and the ways they resolve dissonance.

80. As I observed in my earlier report, cognitive dissonance is a theory that can explain any behavior after the fact, but has little predictive relevance. For example, if a smoker does not switch to smoking “light” brands then they have not experienced sufficient dissonance to do so. If a smoker switches to “light” brands, then they have done so to resolve dissonance, but they did not suffer sufficient dissonance to cause them to switch to ultra-lights or stop smoking altogether.

81. I also observed that explanations of behavior that are diametrically opposed could both be consistent with cognitive dissonance theory. For example, consider a “man’s man” who believes that real men smoke full flavored cigarettes. However, this smoker also does not like the strong taste of full-flavored cigarettes, preferring the milder taste of “lights.” If this individual smokes “lights,” he experiences dissonance because he believes real men, like him, do not smoke “lights.” This smoker may resolve the dissonance by justifying his choice of “light” brands because they are healthier. In contrast to Dr. Goldberg’s opinions regarding the role of “lights” in reducing dissonance among smokers by reassuring smokers that they are consuming a

healthier cigarette, this smoker's behavior is explained by his need to justify his preference for the taste of "light" brands. The hypothetical "man's man" justifies his actual preference for "light" brands by pointing to its perceived health benefits because this reinforces his actual taste preference. Such "theories" that explain all outcomes after the fact are not helpful.

82. Dr. Goldberg appears to suggest that cigarette manufacturers should have ignored the encouragement of the Federal Trade Commission and the public health community to develop and promote low tar and low nicotine cigarettes. He is silent on what actions he believes the industry should have taken in the face of market demand and a regulatory environment he apparently believes to have been misguided. The industry's actions in developing and differentiating low tar and low nicotine products and in advertising and promoting these products were consistent with the encouragement received from the Federal Trade Commission and the urging of the public health community.

83. Dr. Goldberg asserts that the industry made "deceptive claims" regarding its "light" brand products and it is only by virtue of these claims that the "light" brand category grew.<sup>53</sup> He offers no evidence that any "claims" made by the industry were deceptive. He ignores the fact that the industry was required to communicate levels of tar and nicotine on its advertising and that it was required to use a government mandated (and for many years, a government managed) test of these levels. He points to no claims

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<sup>53</sup> Goldberg Report, at 2-3

by the industry or individual companies that lower FTC tar and nicotine levels would reduce the health risks of smoking. He also ignores the fact that all cigarette brand advertising and packaging, including that of all “light” cigarette brands, carried health warnings.

84. Dr. Goldberg argues that the taste appeal of “light” cigarette brands is largely illusory. He bases this argument on early smoker response to “light” cigarette brands. He ignores the fact that there was subsequent reformulation of “light” cigarette brand products, especially the current market leader, Marlboro Lights. He also ignores research on smokers that demonstrates a major shift in smoker taste preferences following introduction of “light” cigarette brands.

85. A series of qualitative studies by Brand, Gruber, Stander and Company found that smokers made adjustments to their tastes over time and came to prefer the lighter taste of “lights.”<sup>54</sup> In a report dated October 1974 this consulting firm concluded:

“There appears to have been a major shift in attitudes toward low tar, low nicotine cigarettes during the past two-and-a-half years. The primary character of this shift is that most smokers of hi-fi brands no longer feel they are making a major compromise to taste in order to obtain the advantages of low tar and low nicotine. Whereas two-and-a-half years ago virtually every smoker of hi-fi cigarettes believed that his brand was substantially less tasteful than what he used to smoke, there was hardly any occurrence of this phenomenon at all at this time. Indeed, there was substantial evidence that smokers of hi-fi cigarettes

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<sup>54</sup> Brand, Gruber, Stander and Co. (1971), “The Perceptual Context of Smoking, Phase I of a Study to Vitalize the Multifilter Brand,” October (Ex. 44); Brand, Gruber, Stander and Co. (1972), “A Search for Advertising Positioning Strategies for Philip Morris Multifilter, March (Ex. 45); Brand, Gruber, Stander and Co. (1975), “Evaluating a New Campaign for Parliament Cigarettes,” November (Ex. 46).

believed their brands tasted better than regular filter non-hi-fi cigarettes.”<sup>55</sup>

86. Dr. Goldberg declares the public health community a mere “murmur” compared to the advertising and promotion of “light” cigarette brands by cigarette manufacturers. This is not only an unfair characterization; it misrepresents facts. The public health community has enormous credibility, while the tobacco industry and its member companies are among the least credible of organizations. Dr. Goldberg misrepresents the spending of cigarette manufacturers on advertising and promotion in his representation of the meaning of the FTC reports on tobacco advertising and promotion. As a result of the way in which the industry is required to report its advertising and promotion expenditures, the FTC data largely reflect price discounting (which has grown in response to the growth of new “price brands” to which the established cigarette manufacturers have had to respond in recent years). While inflating the real advertising expenditures for promoting specific brands of cigarettes, Dr. Goldberg ignores the very substantial spending on anti-tobacco advertising by government entities.

87. Dr. Goldberg appears to object in principle to cigarette manufacturers’ advertising. There is little evidence that advertising has any significant influence on the initiation of smoking. Social influences such as parents, siblings, and friends are by far the most important factors in the initiation of smoking.<sup>56</sup> In any case, the relevance of

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<sup>55</sup> Brand, Gruber, Stander and Co. (1974), October 1974 Sessions, p. 16 (Ex. 47).

<sup>56</sup> For example, many of the *Piscetta* absent class members indicated that friends or family were the reasons they started smoking their initial brand. See, e.g., Kelly Dep. at 12:12-22; Ross Dep. at 104:4-71; Watson



Dr. Goldberg's historical critique of cigarette brand advertising to the matter at hand -- "light" cigarette brands -- is not obvious. An examination of the advertising for "light" cigarette brands over time reveals a remarkably diverse array of advertising messages and appeals. Given such diversity, it is not surprising that there would be no uniform shared meaning of the word "light" among smokers. As I observed in my earlier report, advertising for "light" cigarette brands differs dramatically across the brands and over time for the same brand.

88. The most common messages in advertising for "light" cigarette brands are related to taste. Thus, Benson and Hedges uses an ad that focuses on a woman and man with the words: "She likes sushi; he thinks it's a raw deal; but there's one taste they agree on." Similarly, Benson and Hedges has used the tag line "Because the pleasure lasts longer." On the other hand, a number of advertising executions used by Benson and Hedges focus more on style or fashion and use a tagline that states: "B&H, I like your style." Still other Benson and Hedges advertising features both the full flavor and "light" brand products with the tagline: "For people who like to smoke."

89. In contrast, early advertising for Camel Lights focuses on taste in a low tar cigarette: "Try the solution. Camel Lights. Camel Lights solves the low tar low taste problem." Later advertising focuses more on the portfolio of products or features Camel Lights with the tagline "It's a whole new world. Today's Camel Lights, unexpectedly

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Dep. at 13:14-19; Pulliam Dep. at 8:12-15; Swanson Dep. at 21:4-14. And in some cases, friends and family were the reasons smokers switched into lights. See Deposition of Xavier Smith, *Piscetta v. Philip Morris USA Inc.*, Case No. 03 VS 048475J (Ga. State Ct. Nov. 21, 2005) at 15:9-16:2 (stating that it was his wife who led him to switch to lights) ("Smith Dep.") (Ex. 48); Hagan Dep. at 8:17-23.

mild.” More recent advertising has used the tagline “Pleasure to Burn” with very little identification of the Camel Light brand (a tagline in very small type that says: “Brought to you by Camel Lights.” Early advertising for Kent Golden Lights focuses explicitly on taste and makes direct comparisons to the level of tar delivered by competitive brands of “light” cigarette brands. Later advertising focuses on “Golden *De*Lights.” Parliament Lights focuses on its recessed filter. Advertising for Marlboro Lights makes a direct connection with the parent brand: “The spirit of Marlboro in a low tar cigarette.” This advertising retains the cowboy theme associated with Marlboro. In sharp contrast, Misty Lights clearly positions itself as a cigarette for women that is “slim ‘n sassy” with a “slim price, too.” Players Lights uses the appeal: “25 for the price of 20 breaks all the rules.”

90. The advertising for “light” cigarette brands has also varied in terms of the specific details of execution. Some advertising features people; some does not. Some advertising focuses on the outdoors; some focuses more on fashion and sophistication. Some advertising draws attention to the lower tar and nicotine yield; some does not.

91. Dr. Goldberg offers a selective discussion of the surveys I reviewed in my earlier report. I agree that these surveys differ on many dimensions and that some of these surveys did not differentiate between smokers of full flavor cigarettes and smokers of “light” cigarette brands. Of course, some of these surveys were conducted prior to the introduction of “light” cigarette brands. The meaning of any individual survey can certainly be debated. Nonetheless, the intent of my review of survey evidence in my earlier report was to demonstrate a pattern across surveys. There is a consistent pattern, and that pattern is one of significant variability among smokers in general and smokers of

“light” cigarette brands more specifically. Dr. Goldberg offers no evidence to contradict the existence of this general pattern.

92. Consistent with the findings of the many surveys I reviewed in my earlier report, the deposition testimony of plaintiffs reveals enormous differences among smokers of “light” cigarette brands and provides rich detail of these differences that are not easily obtained in a structured survey. For example, Marlis Higgins stated in her deposition that she switched to “light” brands “because there was less tar and nicotine . . .” But not necessarily because [she] thought they were safer.”<sup>57</sup> Xavier Smith indicated that his choice to smoke “light” brands was not just due to the advertised low tar and nicotine but because of the, rather vague, “whole feeling” associated with smoking “lights.”<sup>58</sup> And Doug Landau, who admitted that it was “never a secret in [his] house that smoking was a bad idea,” suggested that smokers who still believed that the label “light” assured lower tar and nicotine delivery in spite of recent reports to the contrary did so because “hope springs eternal . . . people have an infinite capacity for self delusion and their responsibility -- not taking responsibility.”<sup>59</sup> This testimony makes very clear that smokers of “lights” brands are aware of the risks of smoking any cigarettes, including “light” cigarette brands, and many of these individuals acknowledge a conscious awareness of their trade-offs between the benefits of smoking “light”

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<sup>57</sup> Deposition of Marlis Higgins, *Piscetta v. Philip Morris USA Inc.*, Case No. 03 VS 048475J (Ga. State Ct. Nov. 8, 2005) at 21:10-25 (“Higgins Dep.”) (Ex. 49).

<sup>58</sup> Smith Dep. at 38:15-39:5.

<sup>59</sup> Deposition of Doug Landau, *Piscetta v. Philip Morris USA Inc.*, Case No. 03 VS 048475J (Ga. State Ct. Dec. 2, 2005) at 93:17-43, 98:1-22 (“Landau Dep.”) (Ex. 50).

cigarette brands and the associated health risks (directly contradicting the theory of Dr. Slovic).

93. Dr. Goldberg makes much of the "illusory" character of taste differences and attempts to cast such differences as either unimportant or a surrogate for tar and nicotine delivery. In offering these opinions, Dr. Goldberg is clearly ignoring the vast empirical data on the importance of taste and the statements of smokers that taste differs from brand to brand, even within the lower tar and nicotine category. He seems to suggest that smokers "just don't know or understand" taste differences between cigarette brands and packings. This is contrary to many of the depositions provided. For example, William Hall deftly described the taste differences he perceived between "light" and full-flavored brands:

A: Because it's my understanding that "light" means lighter smoke and flavor.

Q: Okay.

A: Like if you smoke a Red, it's really heavy. Smoke an ultra light, it's -- the smoke is really light, and I don't mean -- let's see. Do you smoke?

Q: No.

A: So this is going to be hard to explain. Have you ever smoked?

Q: No.

A: Okay. Well, relate it to food then. You like food? Okay. So you have au jus. You have au jus, right, a natural sauce that's made from cooking meat. You cook the meat, you get the juice off of it, you flavor it, you've got au jus. It's a very light sauce, okay. It's sometimes clear, you can see through it. Then you have a cream sauce, okay. It's very heavy, so when you put it in your mouth, you -- the texture, the feel of the sauce is actually heavier than the

jus sauce, which is an ultra light sauce, we'll say. So you put the jus in your mouth and it's very light, almost like drinking flavored water. Does that make sense?

Hall Dep. at 109:12-110:10.<sup>60</sup>

94. Dr. Goldberg also seems to confound the perception of taste with levels of tar and nicotine. While it is likely that the levels of tar and nicotine have an influence on the strength of cigarette taste, this is not the same as the nicotine delivery that Dr. Goldberg seems to believe is the real driver of differences in taste perceptions among smokers. As best as I can tell, Dr. Goldberg has done no taste tests that would inform his opinions.

95. Dr. Goldberg goes on at length about smokers being poor social scientists that do not understand their own behavior or know their own mind. This is a rather consistent refrain across all plaintiffs' experts. Implicit in this view is that information obtained from smokers, or any other consumer, cannot be relied upon. This provides a convenient means to dismiss all of the very substantial empirical research and even deposition testimony that can inform the issues in this matter. However, this view begs the question of where reliable evidence may be obtained. There is ample evidence that individual "expert" opinion, in the absence of empirical data is often no more reliable than that of laypersons.<sup>61</sup> The implications of biased judgment and a lack of self-

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<sup>60</sup> See also Landau Dep. at 16:2-14 (comparing the harshness of Marlboro Reds and Lights to the differences between Starbucks' "stronger more burnt coffee bean" and Caribou coffee's slightly less burnt taste).

<sup>61</sup> C. F. Camerer and E. J. Johnson (1991), "The Process-Performance Paradox in Expert Judgment: How Can Experts Know So Much and Predict So Badly?," in K. A. Ericsson & J. Smith (Eds.), *Towards a General Theory of Expertise: Prospects and Limits*, (New York: Cambridge Press) pp. 195-217; J. Scott Armstrong (1991), "Prediction of Consumer Behavior by Experts and Novices," *Journal of Consumer*

awareness offered by Dr. Goldberg and other experts for plaintiffs must also extend to “experts” operating under an assumption of universality. This is a philosophical view that undermines all expert opinion.

96. Dr. Goldberg also has much to say about how brand names and packaging delivered “health” messages. There is no doubt that different cigarette brands and packings were sold under different names, using different advertising appeals and different packaging. This is how marketing is done. However, he offers no explanation of how these differences convey a “health” message. To the extent that cigarette manufacturers sought to differentiate their “light” brand products from their full flavor products, they merely drew attention to the very factors the Federal Trade Commission encouraged that they promote.

97. Dr. Goldberg takes issue with my opinion that smokers whose purchasing decisions are determined by health risks would select ultra-light cigarettes, which, in fact, command a very small share of the market. He arrives at his conclusion that even these health-conscious smokers would select “light” brands through an odd logic that seems to assume that smokers understand that there is unlikely to be a health benefit associated with ultra-lights, so they might as well smoke a more flavorful cigarette. But, if smokers have uncertainty about the health benefits of ultra-lights, why would they not be even more uncertain about any health benefits associated with “light” cigarette brands.

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*Research*, 18 (1991), 251- 256 (Ex. 51); J. Scott Armstrong (1980), “The Seer-Sucker Theory: The Value of Experts in Forecasting,” *Technology Review*, 83 (June/July), 18-24 (Ex. 52).

98. In summary, Dr. Goldberg merely offers a diatribe against cigarette manufacturers. His opinion is not supported by data, and is, indeed, contrary to the extant data. Dr. Goldberg is certainly entitled to his opinion, but there is no basis for his opinions in science.

## **VII. RESPONSE TO DR. STANLEY PRESSER**

99. Dr. Presser offers a five-page report that includes a description of his qualifications and his assignment.<sup>62</sup> In his deposition testimony, Dr. Presser acknowledges that he is not generally familiar with the whole body of surveys of “light” cigarette brand smokers.<sup>63</sup> He also states that he considered only those surveys conducted in the United States that were described in the text of my report, rather than all of the surveys I described in Exhibit 2 of my earlier report.<sup>64</sup> Apparently, he was not provided with the exhibits that accompanied my report. He also excluded from his analysis any focus groups or other qualitative research to which I refer in my report. Finally, Dr. Presser suggests that he believed the scope of his assignment was to critique my reporting of specific point estimates related to smokers’ beliefs about “light” cigarette brands.<sup>65</sup> He is unable to offer an opinion about the percentage of “light” brand smokers who believe “light” brand cigarettes are safer.<sup>66</sup>

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<sup>62</sup> Expert Report of Stanley Presser, Sep. 27, 2005 (“Presser Report”) (Ex. 53).

<sup>63</sup> Deposition of Stanley Presser, Dec. 1, 2005, at 34. (Ex. 54).

<sup>64</sup> *Id.* at 32.

<sup>65</sup> *Id.* at 43.

<sup>66</sup> *Id.* at 45.

100. Dr. Presser offers various “criticisms” of the individual surveys I reference in the body of my report. He criticizes wording, sample selection, and other matters. I designed none of the surveys he criticizes. He offers criticism of surveys conducted on behalf of the cigarette manufacturers and on behalf of antismoking advocates. As I understand his criticism, he offers reasons he believes the specific point estimates referenced in my report are potentially inaccurate.

101. I agree with Dr. Presser that there are many reasons that point estimates based on a survey may be inaccurate. However, in no case of a survey that I cited to, did I compute the point estimate; I merely repeated the results as reported by the author(s) of the survey themselves. Thus, Dr. Presser offers a critique of selected individual surveys rather than of my more general opinions based on an analysis of a broad array of different surveys.

102. There is an enormous amount of survey research that informs the issues in the present matter. My review of this research finds an incredibly consistent picture of the perceptions of smokers over the last half-century. My own opinions, as articulated in my earlier report, do not depend on any individual survey or the accuracy of any specific point estimate within a given survey. Rather, in my earlier report I pointed to the pattern of findings across many surveys conducted by many different organizations, at different points in time, for different purposes, and using different methods, that unambiguously demonstrates substantial variation among smokers of cigarettes in general and smokers of “light” cigarette brands in particular with respect to an enormous range of characteristics. These characteristics include their reasons for initiation of smoking, their reasons for continuing to smoke (or not), their reasons for smoking “light” cigarette brands, their



brand preferences, their price sensitivity, their perceptions of and preference for the taste of different types and brands of cigarettes, their frequency and the circumstances of smoking, their perceptions of the health risks of smoking in general, and their perceptions of the health risks associated with “light” cigarette brands, among others.

103. As an example, Dr. Presser faults the design of the 2003 Health Information National Trends Survey (HINTS), as well as the 1976 Roper survey, because they ask only for reasons “light” brand smokers currently smoke “light” brands rather than the reasons these smokers began smoking “light” cigarette brands.<sup>67</sup> While this is an accurate description of the questions asked in these two surveys, the questions that were asked reveal important variability among smokers of “light” cigarette brands. Nevertheless, these studies clearly offer information about current reasons for smoking “light” cigarette brands and reveal substantial variations among smokers of “light” cigarette brands. In another case, Dr. Presser criticizes a 2001 study by Kozlowski, et al. because it has a small sample size.<sup>68</sup> He also objects to the wording of the question as suggesting a counter-factual, which he believes might have confused some respondents. This was a study published in a peer-reviewed publication devoted to anti-smoking papers. Whatever its flaws, the paper revealed that only 31% of smokers of “light” cigarette brands believed “light” cigarette brands would reduce the risk of smoking. In the case of still other surveys Dr. Presser is critical of the fact that results reflect the

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<sup>67</sup> Presser Report, at 3-4.

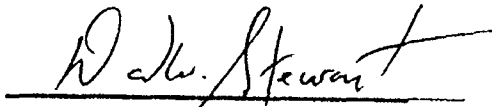
<sup>68</sup> Presser Report, at 5.

opinions of all smokers rather than only “light” brand smokers. However, “light” brand smokers represent a substantial proportion of all smokers.

104. The survey research I reviewed in my earlier report also reflects the changes that have occurred in the cigarette market and in the “consensus” understanding of the public health community regarding the health risks of smoking. In developing my report, I had to make decisions about how much of this body of research to report and how to report it. I chose to exclude some studies altogether. These studies did not seem relevant to the present issue, were redundant as background information, or were sponsored exclusively by the cigarette manufacturers (various tracking studies). I selected a subset of studies to report that included a balance of sponsorship, provided some historical background, and were generally representative of the larger body of research findings. I included this first subset of studies in Exhibit 2 of my report. This exhibit includes a rather detailed description of methodology and results. From this

larger group of studies, I incorporated a small number of examples in the text of my report. Dr. Presser's analysis of the surveys I describe in the text of my report is, therefore, not representative of the fuller body of surveys, especially because he has not been provided with more detailed descriptions of the underlying surveys. Nor does his critique even address the question of variability found among "light" brand smokers, and it certainly offers nothing to refute the conclusion that substantial variability exists among these smokers.

Respectfully submitted this 23<sup>rd</sup> day of May, 2006.

A handwritten signature in black ink, appearing to read "D. W. Stewart", written over a horizontal line.

David W. Stewart, Ph.D.